



## VEGETATION MANAGEMENT GUIDELINE

Sericea Lespedeza [*Lespedeza cuneata* (Dum.- Cours.) G. Don]

### SPECIES CHARACTER

#### DESCRIPTION

*Sericea lespedeza* is a warm season perennial legume. It has erect, herbaceous to somewhat woody stems, standing 3' to 6' (.8 - 2 m.) tall, with many erect, leafy branches. Leaflets have densely flattened hairs which give a grayish or silvery appearance. The compound leaves are composed of three leaflets, with leaflets varying in length from 1/4" to 1" (.8 - 2.5 cm). The lower leaves have petioles, but the upper leaves are nearly sessile. The leaflets are much longer than wide, tapering to the base, and wider above the middle, narrowing abruptly to a small sharp point. Flowers are solitary or in clusters of 2 - 4 in upper and median leaf axils. The corollas measure from 1/4" to 3/8" (7 - 9 mm.) long and are a pale creamy-yellow with conspicuous purple or pink markings. The fruits are oval and up to 1/8" (3 mm.) wide.

#### SIMILAR SPECIES

The pale creamy - yellow flowers are smaller than those of round- headed bush clover (*L. capitata*) and hairy bush clover (*L. hirta*), which also have cream-colored or yellowish flowers. The base of the standard (the upper petal of the flower) of *sericea lespedeza* has two broad purplish-rose-colored streaks on the inside of the center portion. The flowers of round - headed bush clover and hairy bush clover occur in clusters of three to many (20 - 25), in contrast to *sericea* which has solitary flowers or clusters of 2-4. In addition, the stem hairs of these commonly confused species are spreading rather than being appressed to the stem, as in *sericea lespedeza*. The similar appearing slender bush clover (*L. virginica*) has tips of the leaflets that are more rounded than *sericea*, and a leaflet that is linear to oblong. *Sericea lespedeza* has a conspicuous point at the end of its leaf. Flowers of slender bush clover are purplish.

#### DISTRIBUTION

*Sericea lespedeza* was brought to the U.S. from Japan in the 1890's. In 1900 it was introduced by the USDA for erosion control. It was first introduced in the southern United States, and has now become naturalized from Maryland, Virginia, Tennessee, Missouri and Texas north to Pennsylvania, Ohio, Michigan, Illinois and Oklahoma. It has been introduced into various areas as a soil cover for erosion control, for soil improvement, as food and cover for quail, wild turkey, and other wildlife, and to a lesser extent, for forage and hay.

#### HABITAT

*Sericea lespedeza* can grow in a variety of habitats including woodlands, thickets, fields, prairies, disturbed open ground, borders of ponds and swamps, meadows, and especially along roadsides. It shows great



resistance to summer drought and an ability to form a dense stand on sterile, steep or eroded slopes. It is unpalatable to some livestock and many native animal species because of tannins present in its tissues.

#### LIFE HISTORY

Sericea lespedeza produces growth in the spring (mid to late April) from root crown buds at the base of last year's stems. Flowering begins in late July and can continue through October. This species spreads primarily by seed. Seeds are dispersed in the fall and are reported to remain viable for twenty or more years. Animals play a primary role in seed dispersal and haying of infested fields can also distribute seeds. Seeds from Sericea lespedeza have been known to contaminate native grass seed sources. Scarification is necessary for the germination of sericea lespedeza and seedlings may only represent 1% of seeds in the soil.

#### EFFECTS UPON NATURAL AREAS

Sericea lespedeza is primarily a threat to open pastures, meadows and fields, as well as prairies and areas of prairie restoration. Once established, it will crowd out many native plants and develop an extensive seed bank. In addition to competing for light, water and nutrients, it produces allelopathic chemicals that inhibit seed germination and growth of other plants. Sericea is a legume but furnishes very little nitrogen to surrounding plants. Deer will not utilize sericea unless it is kept short by mowing or grazing. Quail sometimes consume the seeds and some wildlife species will use it for shade during the summer. Cover, however, is lacking when sericea is dormant because it reduces desirable native plants.

#### CURRENT STATUS

Because of the widespread use of sericea lespedeza by many federal agencies it has become established throughout the U.S. Numerous stands that are well-established along roadways will continue to provide a source for spreading into surrounding more natural habitats. This invasive seems to be spreading northward. Sericea lespedeza is designated as a noxious weed in Kansas. Infestations are so severe on some farms that it has depressed property values.

#### CONTROL RECOMMENDATIONS

Options available for control of sericea lespedeza include management, mechanical and chemical methods. There are no biological controls approved for sericea lespedeza at this time, other than grazing. There is a lot of conflicting information available on the best methods for controlling sericea lespedeza. Research into various methods for managing sericea lespedeza is currently being conducted at Emporia State University and Kansas State University (KSU), as well as Oklahoma State University (OSU). The best control approach is early detection, isolation of infested areas and control of individual plants with herbicides. An integrated approach to control is necessary to minimize damage.

#### RECOMMENDED PRACTICES IN NATURAL COMMUNITIES OF HIGH QUALITY

Roundup (glyphosphate) at 1.5 to 2%, Remedy (triclopyr) at 1-2pts/acre ( approx. 1.25% -

2.5%) and Ally or Escort (metsulfuron methyl) at .4 oz/acre (approx. 1 oz per 100 gallons or .00008%) are considered the best chemicals available. Ally and Escort have the same active ingredient and are both made by Dupont. However, they are registered for different uses; Ally is registered for agriculture and Escort is registered for uses in rights of way and is often cheaper. The manufacturer recommends the use of a non-ionic surfactant for foliar applications of Ally or Escort on sericea lespedeza. Remedy has been found to be effective during June to mid - July, when the plant is still vegetative and during early flowering. Garlon 4 has the same active ingredient as Remedy and both are made by Dow. After bud stage until early October, Ally or Escort are the products of choice. Spot treatments with these herbicides is the preferred method of application since they reduce other forbs in the community. If sericea lespedeza is not growing or flowering because of heat or drought conditions, herbicide effectiveness is greatly reduced. An application of Transline herbicide (active ingredient 40.9% clopyralid) a legume specific herbicide at label rates may also be used to control this invasive. By law, herbicides may only be applied according to label instructions and by licensed herbicide applicators or operators when working on public properties. Applications of herbicides should be made while backing out of an infested area to minimize exposure of workers to the herbicide.

Seed dormancy of sericea lespedeza can be broken by prescribed burning but resulting seedlings may be less viable. Forcing more seeds to germinate and following up with a mechanical or chemical treatment has been effective (see below). Using fire to encourage seed germination before spraying may be helpful in diminishing the seed supply in the soil, reducing the amount of follow up treatment needed.

#### RECOMMENDED PRACTICES ON BUFFER AND SEVERELY DISTURBED SITES

\_\_\_\_\_ Grazing infested sites with sheep and goats could be an effective control, if it is an option. Pastures should be properly fertilized and grazed during April and May to reduce the occurrence of sericea lespedeza. Livestock will consume the seeds and deposit them elsewhere in manure, so it is advisable to not graze sericea infested areas during the fall and winter when plants have produced seeds.

Researchers from KSU and OSU suggest mowing can reduce the vigor of sericea if it is cut closely multiple times each year. It should be mowed each time it reaches a height of 12 - 18 inches.

The above mentioned herbicides should be effective in disturbed sites as well. Oklahoma State University researchers found in 1995 that excellent control of sericea was achieved using 1 pt/acre of Remedy applied in June and July and Ally applied in September. Researchers at OSU also found that a single mowing in June or July combined with a herbicide treatment in July or September provided 100% control of seedlings. Dr. Walter Fick of KSU reports that after burning in early May, mowing 4 weeks later, and then using .5 pts/acre (approx. .6%) of Remedy 4 weeks later resulted in nearly 100% defoliation by the end of the growing season and 86% stem reduction one year later.

#### FAILED OR INEFFECTIVE PRACTICES

Hand pulling is impractical due to the extensive perennial root system. Prescribed

burning alone is not effective for controlling sericea lespedeza. Fall, winter and spring burning alone have been found to cause the legume to spread or increase. Range and pasture researchers at Kansas State University (KSU) have been looking into August or September burns for control.

Mowing as low to the ground as possible at the flower bud stage (July to late summer) for 2 to 3 consecutive years during the flowers bud stage has been reported to reduce vigor and control further spread. However, researchers at OSU and KSU recommend the previously mentioned mowing strategies. Dr. Fick of KSU reported that a single mowing in July has not reduced populations but he has started to mow sericea stands during July each year to determine its influence on stand size and seed production.

Researchers at OSU report that none of the commonly used herbicides for broad-leaved weed control have provided good control of sericea lespedeza. Amber, 2,4-D, Grazon P+D, and Weedmaster have been ineffective on established stands of sericea.

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13. *Lespedeza cuneata*